IN THE CLAIMS

1-5. (Cancelled)

6. (Currently Amended) A solid-state complementary metal-oxide semiconductor type image pickup device, comprising:

a semiconductor substrate having a well region formed thereon; and

a pixel unit having a plurality of pixels in a pixel row on the semiconductor substrate, each pixel in the pixel unit including

(a) a photoelectric conversion element formed in said well region to receive light and produce a signal charge in accordance with an amount of the received light;

(b) a readout section formed in said well region to read out the signal charge produced by said photoelectric conversion element at a predetermined readout timing;

(c) a node connected to the photoelectric conversion element through the readout section~~, the node having a capacitance~~; and

(d) voltage control unit to apply a variable substrate bias voltage to said well region dependent upon the read out of the signal charge by said readout section,

wherein,

the well region is electrically isolated from other well regions along the pixel row.

7. (Previously Presented) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 6, wherein said plurality of pixels are arranged in a two-dimensional array on said semiconductor substrate.

8. (Previously Presented) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 7, wherein said well region is electrically integral in a region of said semiconductor substrate which includes all of said pixels

arranged in the two-dimensional array, and a common substrate bias voltage to all of said pixels is applied to the well regions.

9. (Previously Presented) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 7, wherein said well region is formed in an electrically isolated relationship for each row of said pixels arranged in the two-dimensional array, and an independent substrate bias voltage is applied to the cell regions for each row.

10. (Previously Presented) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 6, wherein said well region is a p-type well region and the substrate bias voltage is a negative voltage.

11. (Previously Presented) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 6, wherein said solid-state image pickup device each pixel also includes a pixel transistor connected to said photoelectric conversion element through said node for converting the signal charge read out from said photoelectric conversion element into an electric signal and outputting the electric signal to a signal line.

12. (Cancelled)

13. (Currently Amended) A complementary metal-oxide semiconductor type solid-state image pickup device, comprising:

a semiconductor substrate having a well region formed thereon; and

a pixel unit having a plurality of pixels in a pixel row on the semiconductor substrate, each pixel in the pixel unit including

(a) a photoelectric conversion element formed in said well region to receive light and produce a signal charge in accordance with an amount of the received light;

(b) a readout section formed in said well region to read out the signal charge produced by said photoelectric conversion element at a predetermined readout timing;

(c) a node connected to the photoelectric conversion element through the readout section~~, the node having a capacitance~~, and

(d) voltage control means to apply a substrate bias voltage to said well region and change the substrate bias voltage during a storage period of the signal charge by said photoelectric conversion element,

wherein,

the well region is electrically isolated from other well regions along the pixel row.

14. (Previously Presented) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 13, wherein said plurality of pixels are in a two-dimensional array on said semiconductor substrate.

15. (Previously Presented) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 14, wherein said well region is formed electrically integrally in a region of said semiconductor substrate which includes all of said pixels arranged in the two-dimensional array, and a common substrate bias voltage to all of said pixels is applied to the well regions.

16. (Previously Presented) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 14, wherein said well region is formed in an electrically isolated relationship for each row of said pixels arranged in the two-dimensional array, and an independent substrate bias voltage is applied to the cell regions for each row.

17. (Previously Presented) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 13, wherein said well region is a p-type well region and the substrate bias voltage is a negative voltage.

18. (Currently Amended) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 13, wherein each of said plurality of pixels also includes a pixel transistor connected to said photoelectric conversion element through said node for converting the signal charge read out from said photoelectric conversion element into an electric signal and outputting the electric signal to a signal line.

19. (Cancelled)

20. (Currently Amended) A method to drive a solid-state image pickup device including (a) a semiconductor substrate having a well region formed thereon; and (b) a pixel unit including a plurality of pixels in a pixel row on the semiconductor substrate, each pixel in the pixel unit including (i) a photoelectric conversion element formed in said well region to receive light and produce a signal charge in accordance with an amount of the received light, (ii) a readout section formed in said well region to read out the signal charge produced by said photoelectric conversion element at a predetermined readout timing, (iii) a node connected to the photoelectric conversion element through the readout section~~, the node having a capacitance~~, and (iv) voltage control means to apply a substrate bias voltage to said well region and change the substrate bias voltage during a storage period of the signal charge by said photoelectric conversion element, said method comprising the steps of:

converting light to a signal charge;

storing said signal charge during a charge storage period; and

applying a predetermined substrate bias voltage to said well region that is variable dependent upon the signal charge read out by said readout section during said readout period,

wherein,

the well region is electrically isolated from other well regions along the pixel row.

21. (Previously Presented) The driving method for a complementary metal-oxide semiconductor type solid-state image pickup device according to claim 20, wherein said

photoelectric conversion element is provided for each of a plurality of pixels formed in a two-dimensional array on said semiconductor substrate.

22. (Previously Presented) The driving method for complementary metal-oxide semiconductor type a solid-state image pickup device according to claim 21, wherein said well region is formed electrically integrally in a region of said semiconductor substrate which includes all of said pixels arranged in the two-dimensional array, and a common substrate bias voltage to all of said pixels is applied to the well regions.

23. (Previously Presented) The driving method for a complementary metal-oxide semiconductor type solid-state image pickup device according to claim 21, wherein said well region is formed in an electrically isolated relationship for each row of said pixels arranged in the two-dimensional array, and an independent substrate bias voltage is applied to the cell regions for each row.

24. (Previously Presented) The driving method for a complementary metal-oxide semiconductor type solid-state image pickup device according to claim 20, wherein said well region is a p-type well region and the substrate bias voltage is a negative voltage.

25. (Currently Amended) A method for driving a complementary metal-oxide semiconductor type solid-state image pickup device including (a) a semiconductor substrate having a well region formed thereon, and (b) a pixel unit including a plurality of pixels in a pixel row on the semiconductor substrate, each pixel in the pixel unit including (i) a photoelectric conversion element formed in said well region to receive light and produce a signal charge in accordance with an amount of the received light, (ii) a readout section formed in said well region to read out the signal charge produced by said photoelectric conversion element at a predetermined readout timing, (iii) a node to connect the photo electric conversion element through the readout section~~, the node having a capacitance~~, and (iv) voltage control means to apply a substrate bias voltage to said well region and change the substrate bias voltage during a storage period of the signal charge by said photoelectric conversion element, said method comprising the steps of:

converting light to a signal charge,

storing said signal charge during a charge storage period, and

applying a substrate bias voltage to said well region and changing the substrate bias voltage during said storage period of the signal charge by said photoelectric conversion element,

wherein,

the well region is electrically isolated from other well regions along the pixel row.

26. (Previously Presented) The driving method for a complementary metal-oxide semiconductor type solid-state image pickup device according to claim 25, wherein said photoelectric conversion element is provided for each of a plurality of pixels formed in a two-dimensional array on said semiconductor substrate.

27. (Previously Presented) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 6, wherein the readout voltage is reduced by applying the substrate bias voltage synchronized with charge transfer.